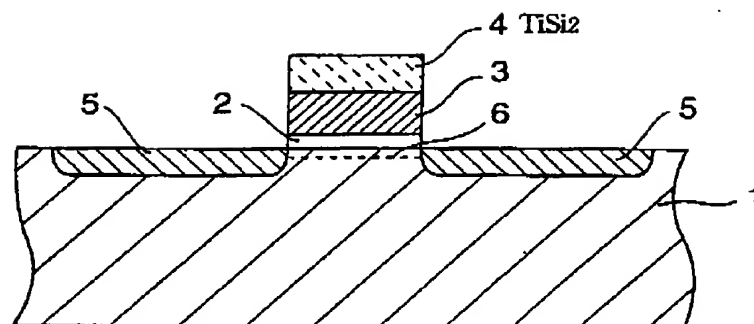
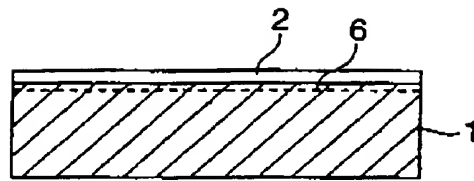


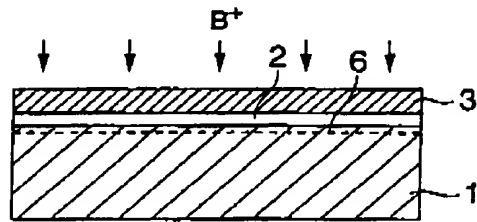
FIG. 1

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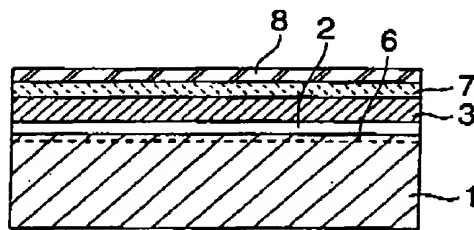
FIG. 2



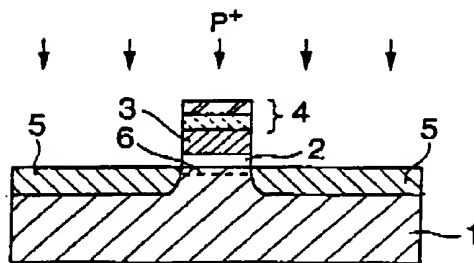
(a)



(b)

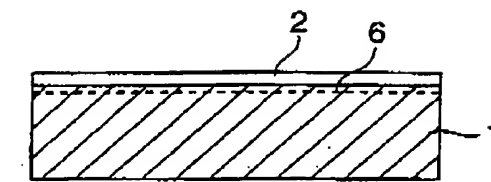


(c)

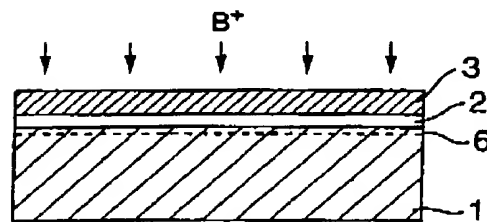


(d)

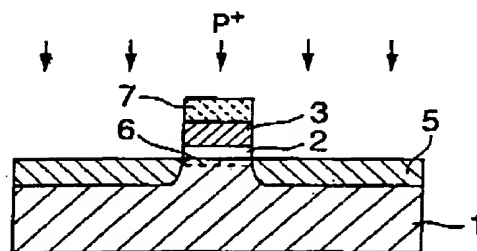
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FIG. 3

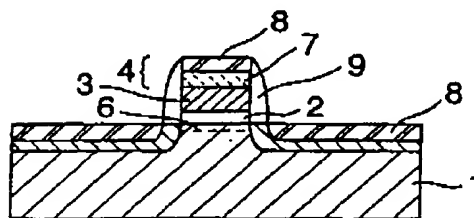
(a)



(b)

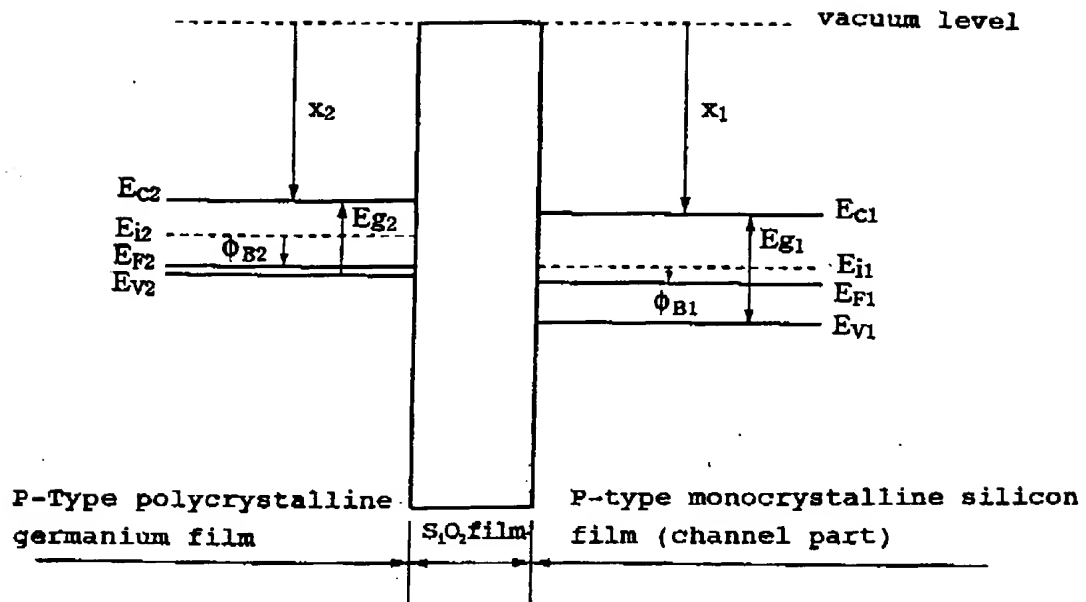


(c)



(d)

FIG. 4



E_C : conduction band edge

E_V : valence band edge

E_F : Fermi energy

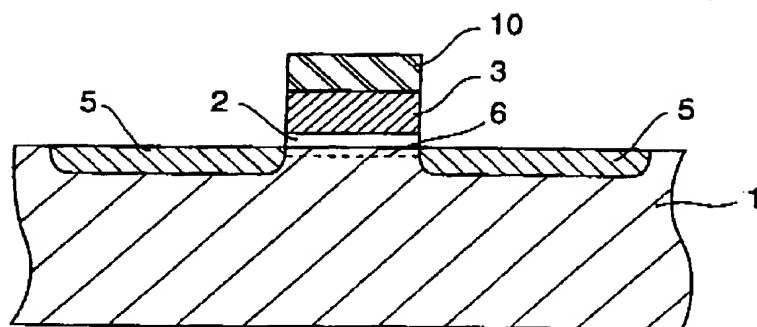
E_i : intrinsic mid gap energy

x : electron affinity energy

E_g : energy gap

ϕ_B : $E_F - E_i$

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FIG. 5

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FIG. 6

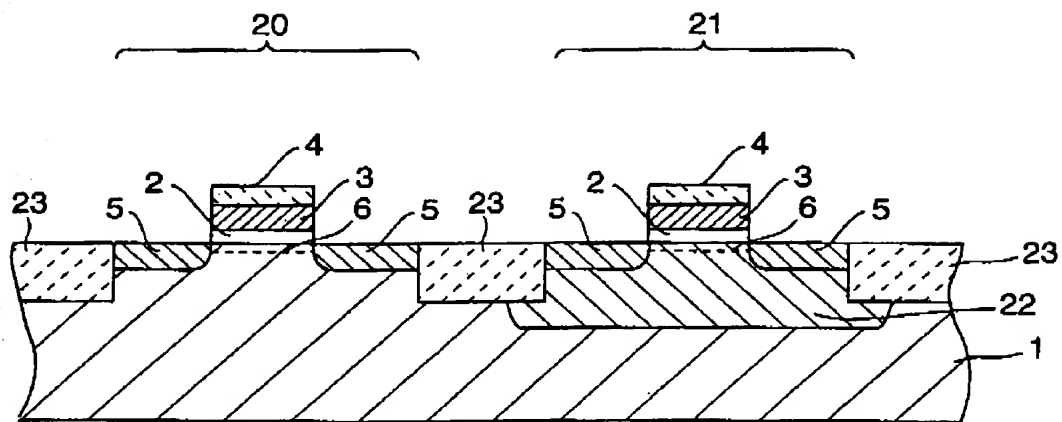


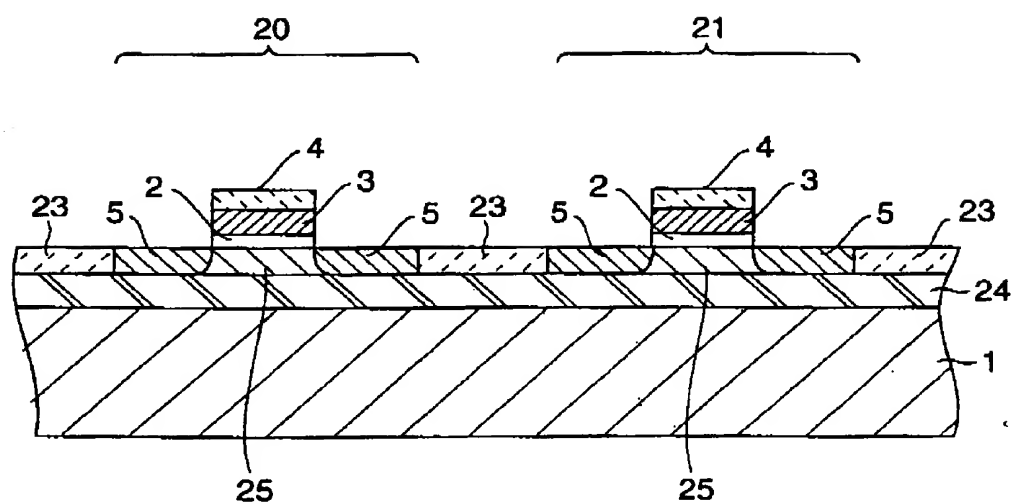
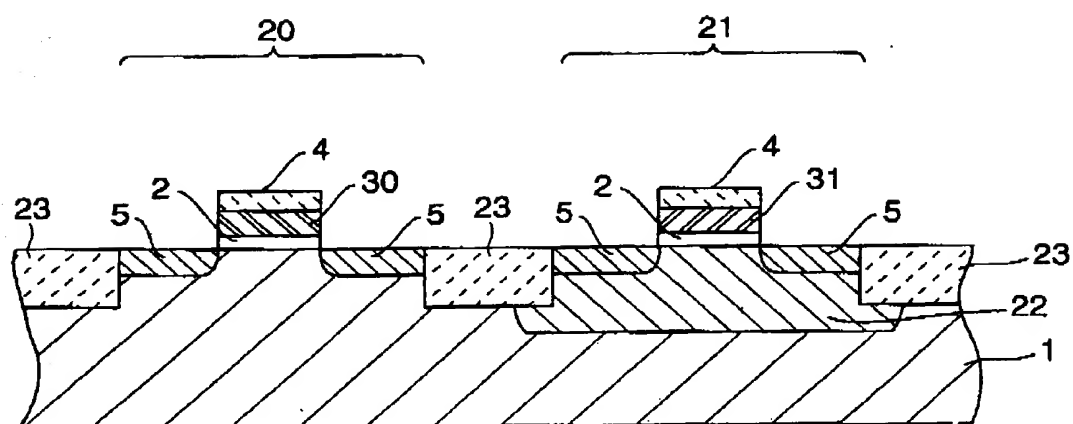
FIG. 7

FIG. 8

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FIG. 9

